

Botany was established at the Academy. The endowment for this chair continues to grow and it will be activated when sufficient funds become available. His many friends and colleagues will miss Tom's thoughtful counsel, ever present humor, and zest for the flora of his native state. A biographical sketch of Tom Howell's eventful and productive life appeared in *Fremontia* 17:11–19, 1989. A memorial service for Tom was held at the Academy on 8 July 1994.

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HERBERT L. MASON
1896–1994

Herbert Louis (né Lewis) Mason, Professor Emeritus of Botany, University of California at Berkeley, died peacefully in Bellingham, Washington, on March 26 at the age of 98. He served as editor of *Madroño* from 1935 to 1963, with the indispensable assistance of Ethel Crum, Helen Sharsmith, and, most importantly, Annetta Carter, transforming it from an almost parochial publication into an important botanical journal. From 1941 to 1963 he was Professor of Botany and Director of the University Herbarium (UC).

Mason was born in Fond du Lac, Wisconsin, on January 3, 1896, one of a pair of identical twins who were the eighth and ninth children of Thomas and Harriet Mason. His interest in botany developed as a child, influenced by his mother's love of gardening and her informal teaching of botany to Herbert and his twin Walter (who ultimately became a florist). The twins entered Stanford University from high school, but volunteered for military service in World War I. They were trained as cooks in Georgia and stationed at an army hospital in Beaune, France. From this experience, Herbert attained proficiency as a cook, a life-long love of opera, and considerable respect for things French.

Returning to Stanford after the war, Herbert received an A.B. in 1921, crediting LeRoy Abrams with kindling his interest in plant taxonomy. He obtained an M.A. from the University of California at Berkeley in 1923, and then taught during 1923–1925 at Mills College, an institution for which he retained a life-long affection. During summers he worked for the Carnegie Institution of Washington, first assisting in F. E. Clements' altitudinal transplanting program in Colorado, and later hunting for plant fossils with R. W. Chaney in the John Day formation of central Oregon. Mason joined the Department of Botany at Berkeley in 1925 as an Associate in what W. L. Jepson referred to as the Phenogamic Laboratory. In 1931 he married fellow Stanford graduate and Berkeley graduate student Lucile Roush, a student of coralline algae working with W. A. Setchell. Immediately after the wedding, he departed for Alaska, where, for the Carnegie Institution, he collected taxodiaceous fossils on St. Lawrence Island in Bering Strait. Both Herbert and Lucile were awarded the Ph.D. in 1932. His thesis dealt with western American Tertiary paleobotany, and was administered by a committee comprising W. L. Jepson (chairman), R. W. Chaney, and C. L. Camp.

The 20's and 30's were an era of intensive efforts to incorporate into biological taxonomy and ecology not only the consequences of Darwinian evolution, but also the more recent findings of genetics and particularly cytogenetics. Mason was strongly influenced by and became a major participant in the group of Bay Area biologists and earth scientists who engaged in the interdisciplinary discussions and activities that led to the formation of a still-active group called The Biosystematists and to the rise of Biosystematics itself. He wrote in 1950: "I have grown up along-side of Biosystematics and have shared the enthusiasm of its workers, and am aware of its values, and know something of its limitations." Blessed with curiosity and an open,

receptive attitude, Mason was willing to consider evidence of every kind to solve problems of classification and distribution—growth hormones, population genetics, polar migration, continental drift. However, his paleontological experience made him sensitive to the fragility of rigid categories and he was skeptical of hierarchical units in both taxonomy and ecology. “The species of Linnaeus vary all the way from separate genera to synonyms of one another—there is no ‘Linnean species’ as such. The same applies to everyone else’s concept of taxonomic units.” He was particularly critical of the Clementsian school of plant ecology, which attributed quasi-organismal qualities to “associations,” “climaxes,” and other phytosociological abstractions.

Mason’s interests ranged widely, and his long editorship of *Madroño* enabled him to employ its pages to comment incisively and frequently on a broad range of topics. A series of papers in the 1930’s dealt with the fossil occurrences of the so-called closed-cone pines, and their bearing on the geological history of California islands and coastline as well as on conifer phylogeny. His specifically taxonomic studies concentrated on *Dodecatheon* in the 1930’s and later shifted to Polemoniaceae, where he emphasized the striking diversity of floral architecture. He employed Alva Day Grant as an artist and trained her so thoroughly in this complexity that she shared with him authorship of his major exposition of this family in Abrams’ *Illustrated Flora of the Pacific States* (1951). The California Division of Fish and Game initiated discussions in 1945 toward undertaking a botanical survey of the state’s wetlands. This enterprise, which involved the field activities of Verne Grant, Malcolm Nobs, and S. Galen Smith, culminated in the production of *A Flora of the Marshes of California* (1957), embellished by the superb line-drawings of Mary Barnas Pomeroy, in what is doubtless his best-known work.

His emphasis turned increasingly toward understanding the underlying causes of the distribution and evolution of plants in time and space, a discipline he termed “plant geography” to distinguish it from Clementsian plant ecology. He viewed plant geography as a dynamic rather than a purely static, descriptive discipline.

His classic paper, “The edaphic factor in narrow endemism” (1946), was among his most influential. Mason brought to plant geography physiological, evolutionary, and taxonomic components. He was constantly revising his lecture notes for the two courses he usually taught—Plant Geography and Phylogenetic Taxonomy, and many of his published papers sprang from this source. His influence on the organization and content of Stanley Cain’s landmark book *Foundations of Plant Geography* (1944) was considerable and perhaps less adequately acknowledged than it might have been. R. H. Whittaker also profited substantially from Mason’s ecological insights. In spring, 1951, Mason spent a sabbatical leave at the University of Nebraska, searching for more evidence on the evolutionary views of Charles E. Bessey. This work was also related to a plan to write a “quite novel” taxonomy text with his former student J. A. Davidson. The emphasis of the text was to be “the development of taxonomy as a philosophy of science” and, although a completed first draft over 500 pages long was announced in 1952, it failed to be published.

Throughout his career, but more prominently in his later years, Mason was interested in several theoretical and philosophical issues. These were reflected by a thoughtful and now-ignored clarification and discussion of the terms taxonomy, systematic botany, and biosystematics (1950), in which he makes a clear distinction between the gathering of facts (systematic botany), their application in a taxonomic framework (taxonomy), and a particular, and then rather new, methodology (biosystematics).

Mason became strongly preoccupied with his analyses of various biological problems, aired them almost without invitation, and was quick to exhibit impatience with colleagues who either failed to understand his arguments, or worse, to appreciate their significance. Ecologist Jean Langenheim, then resident in Berkeley, became a close associate of Mason during the 1950’s, and was instrumental in helping him translate his often abstruse ideas into more readily understandable language. His 1957 paper, “The concept of the flower and the theory of homology” devoted much attention to Zimmermann’s then fashionable “telome theory” and its role in under-

mining confidence in "our concepts of the flower." In the same year Mason and Langenheim published their joint "Language analysis and the concept environment," and in 1961 their "Natural selection as an ecological concept" appeared. The first paper argued that the concept of environment is significant only in that environmental features reflect "some aspect of the operational relations of the phenomena to organisms." We cannot determine the degree to which either paper has impacted evolutionary or ecological thought, but even today both of them are refreshing to read whether the reader agrees with the arguments or not.

To those of us who knew Herbert Mason as a colleague (Constance) or as his student (Ornduff), his influence on our thinking is strong if not always conscious or acknowledged. Langenheim (personal communication) acknowledges Mason's unique way of intellectually probing ideas, and his remarkable foresight in identifying significant ecological issues. Mason's student Arthur Kruckeberg has written to us: "While Herbert eschewed the main-stream of American ecology in the 1940's and 1950's, he was in fact engaged in ecological thinking. He espoused a Gleasonian approach to plants and their environments. Simply put, he believed that single species or populations matched their environments . . . by virtue of genetically controlled spans of physiological tolerance . . . This spartan, individualistic approach to plant ecology took on a special meaning for Mason, particularly as he viewed the rich endemism of the California flora. Mason's illumination of edaphic causes of endemism provoked a flurry of research soon after the 1946 papers appeared. Hans Jenny, James Vlamis and Richard B. Walker probed the physiological basis of serpentine tolerance, while Arthur Kruckeberg and Calvin McMillan took on the issue of the genecological basis of the plant response to serpentine soils. The linkage between narrow endemism and unusual edaphic conditions was forged by Mason and it has proved a heuristic model ever since."

In the 1950's Mason became very much interested in and preoccupied by mathematical set theory as it relates to the organization of taxonomic knowledge. This new-found interest came to dominate the lectures in his two-semester course on Phylogenetic Taxonomy, but so far as we know, he never published any of his ideas in this area. Nevertheless, Mason's ideas about plant systematics and his approach to the field, while perhaps not formally acknowledged, have had a strong impact. Peter Raven has written to us that "Herbert Mason was the best university teacher whom I encountered during my undergraduate education. Consistently stressing access to original literature, and a method of inquiry and analysis, he led many of us to understand a great deal, not only about the characteristics of plants that were of significance in interpreting their phylogeny, but also and especially about the philosophies that underlaid the intelligent use of those characteristics . . . his influence on successive classes of Berkeley students has made a very real impact on the development of the field of systematic and evolutionary botany that will be felt for years to come."

Despite a certain formal manner in classroom situations, Mason was an excellent informal speaker, very popular with garden clubs and other groups, and a resourceful story-teller, full of anecdotes about the many biologists he knew. He obviously enjoyed teaching and his contact with students and laymen. For many years he was active in the Yosemite Field School for the training of naturalists. He initiated a field course in taxonomy that was given in the summers of 1957 and 1958 at Berkeley's Sagehen Creek field station north of Truckee. Shortly before his retirement he became one of three founders of the Elementary School Science Project, funded by the National Science Foundation and operated out of the Lawrence Hall of Science. This project aimed at enhancing the science expertise of students in California grade schools. After he retired, Mason was recalled to service as director of this project, one which has had a continuing and important impact on science education in the United States. These activities came at the close of Mason's academic life but, according to former Lawrence Hall of Science Director W. M. Laetsch, Mason reflected on his role in that project as the most interesting and important thing he had done in his career.

It was a remarkably full and varied career. Both Herbert and Lucile Mason were continuously involved with students, colleagues, and long-time friends. They were famous for their hospitality. Shortly after Herbert's retirement in 1963, they moved to Bellingham, Washington, to be near their son David, who is a professor at Fairhaven College of Western Washington University. David devoted himself unstintingly to his parents' welfare. Lucile died in 1986. The sixteenth volume of Madroño is devoted to Herbert, with an excellent Marion Cave photograph of him as we like to remember him. — ROBERT ORNDUFF and LINCOLN CONSTANCE, University and Jepson Herbaria, University of California, Berkeley 94720.

ANNOUNCEMENT

DR. LYMAN BENSON BOTANY RESEARCH LIBRARY DONATED TO DESERT BOTANICAL GARDEN

The library collection of one of the most prominent botanists of the Southwest during the past century, Dr. Lyman Benson, was recently donated to the Desert Botanical Garden in Phoenix, according to Dr. Robert Breunig, the Garden's executive director.

"The Desert Botanical Garden has one of the finest desert plant collections in the world," said Dr. Breunig. "Dr. Benson's life-long plant research contributed immeasurably to our knowledge of desert plants." He added that it is fitting that this great plant collection and the library of this great scientist be joined through this generous gift. Both collections will continue to be invaluable to the ongoing study of desert plants of Arizona and the Southwestern United States.

Dr. Benson, who died in 1993, is well known as the author of *The Cacti of the United States and Canada* and *The Native Cacti of California* published by Stanford University Press. He also co-authored, with Robert A. Darrow, *Trees and Shrubs of the Southwestern Deserts* and authored *The Cacti of Arizona* published by the University of Arizona Press.

The donation of the collection resulted from the long association of Dr. Benson with his former student Dr. Edward Anderson, the Garden's senior research botanist. Dr. Anderson studied botany with Dr. Benson, who was chairman of the Botany Department at Pomona College in Claremont, CA. Dr. Benson also taught, from 1938 to 1944, at the University of Arizona, Tucson.

The collection will be housed in the Garden's research library and made accessible for research use by appointment.

The Desert Botanical Garden, located in Papago Park at 1201 N. Galvin Parkway in Phoenix, is open from 7 a.m. to 10 p.m. daily. Admission is \$5 for adults; \$4 for seniors; \$1 for children 5–12; and free to children under 5. For more information about the Benson collection contact the Garden's librarian Jane Cole at 941-1225.